

Having thus described the preferred embodiments, the invention is now claimed to be:

1. A ceramic packing element comprising:  
an essentially cylindrical structure comprising a length and a greatest dimension perpendicular to the length defining the diameter of the element, the element being provided with a plurality of internal septa which intersect to define a plurality of passages, the element defining first and second faces, each of the faces having an open face area of from 40-80%.
2. The ceramic packing element according to Claim 1, wherein the open face area is from 45-65%.
3. The ceramic packing element according to Claim 2, wherein the open face area is from 50-60%.
4. The ceramic packing element according to Claim 1, wherein the essentially cylindrical structure comprises a plane of symmetry in a direction defining the length of the element.
5. The ceramic packing element according to Claim 1, wherein a ratio of the diameter to the length is from 2.7 to 6.0.
6. The ceramic packing element according to Claim 5, wherein the ratio of the diameter to the length is from 4.0 to 6.0.
7. The ceramic packing element according to Claim 6, wherein the ratio of the diameter to the length is from 4.5 to 5.0.
8. The ceramic packing element according to Claim 1, comprising at least twenty of the passages.
9. The ceramic packing element according to Claim 1, wherein at least some of the passages have a triangular cross-section.
10. The ceramic packing element according to Claim 1, wherein the greatest dimension is at least 10 cm.
11. The ceramic packing element according to Claim 10, wherein the greatest dimension is from 12-20 cm.
12. The ceramic packing element according to Claim 1, wherein the septa have a thickness, parallel with the first face, of at least 0.12 cm.

13. The ceramic packing element according to Claim 12, wherein the septa thickness is from 0.2-0.5 cm.

14. The ceramic packing element according to Claim 12, wherein a ratio of the septa thickness to the diameter is from about 0.01 to about 0.03.

15. The ceramic packing element according to Claim 1, wherein the structure has a thickness, parallel with the first face, of at least 0.12 cm.

16. The ceramic packing element according to Claim 1, wherein all of the septa in the packing element comprise first and second ends, the septa being connected with the cylindrical structure adjacent the first and second ends.

17. The ceramic packing element according to Claim 1, wherein the ceramic is made from a material selected from the group consisting of natural clays, synthetic clays, aluminas, zeolites, cordierite, zirconia, silica, and mixtures thereof.

18. A method of performing at least one of transferring heat to or from a fluid stream and transferring mass between fluid phases, the method comprising:

flowing the fluid stream through a bed comprising the ceramic packing elements of Claim 1, the packing elements performing at least one of transferring the heat and providing a surface at which the transfer of mass takes place between the fluid phases.

19. The method of mass transfer according to Claim 18, wherein transferring mass includes transferring gaseous sulfur compounds between the fluid phases.

20. A ceramic packing element comprising:

an essentially cylindrical structure comprising a length and a greatest dimension perpendicular to the length defining the diameter of the element, the diameter being at least 10 cm; and

a plurality of internal septa which intersect to define a plurality passages through the element, the septa having a thickness of from 0.12 to 0.8 cm.